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A RENEWABLE FUEL THAT REDUCES AIR POLLUTION

WHAT YOU SHOULD KNOW ABOUT BIODIESEL IN NEW ENGLAND

BACKGROUND

Biodiesel is a domestically produced, renewable fuel that can be manufactured from vegetable oils (primarily soy beans) or recycled oils such as cooking oil. Biodiesel is safe, biodegradable, and reduces air pollutants such as particulate matter, carbon monoxide, hydrocarbons, and air toxics. However, emissions of nitrogen oxides increase with the concentration of Biodiesel in the fuel. Some biodiesel produces more nitrogen oxides than others, but some additives have shown promise in counteracting the increase. Biodiesel used in cars and trucks must meet the requirements of the American Society of Testing and Materials (ASTM) D6751 testing protocol.

BLENDING BIODIESEL WITH REGULAR DIESEL

Blends of 20 percent biodiesel with 80 percent petroleum diesel – known as B20 – can be used in unmodified diesel engines or stationary boilers. Biodiesel can be used in its pure form (B100), but may require engine modifications to avoid maintenance and performance problems. Pure biodiesel can gel in cold weather, which can make B100 unsuitable for use in cold climates. Because biodiesel is a cleaner fuel, it is important to change the fuel filter a few times during the initial period of biodiesel use.

HEALTH AND ENVIRONMENTAL EFFECTS

Biodiesel is a renewable fuel. B20 reduces emissions of particulate matter and carbon monoxide by about 10 percent. It also reduces emissions of hydrocarbons (including some toxic air pollutants) by more than 20 percent. However, B20 increases emissions of nitrogen oxides by approximately two percent. B100 reduces emissions of particulate matter and carbon monoxide by 47 percent. It also reduces emissions of hydrocarbons by 67 percent. However, B100 increases emissions of nitrogen oxides by 10 percent. According to the US Department of Energy, biodiesel production and use, in comparison to petroleum diesel, produces 78% less carbon dioxide emissions. Although carbon dioxide is released when biodiesel made from soybeans is combusted, the annual production of soybean crops helps remove carbon dioxide from the atmosphere.

ESTIMATED COST OF BIODIESEL BLENDS

While costs vary by location, a B20 blend generally costs about 20 cents per gallon more than regular diesel fuel. B100 generally costs about $1 more per gallon than regular diesel fuel. Biodiesel is being used in parts of every state in New England.

New tax incentives may help offset the cost differential between biodiesel and regular diesel. Under the new law, federal excise tax credit is offered to biodiesel blenders – entities that mix pure biodiesel with regular petroleum diesel fuel. The credit amounts to one penny per percentage point of biodiesel made from first-use oils (such as soybean oil) and a half-penny per percentage of biodiesel made from other sources (such as recycled cooking oil). In other words, an excise tax credit of $1 per gallon is offered to certified biodiesel blenders of refined B100 biodiesel. Blenders can pass these cost savings to consumers through competitive pricing practices.

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BIODIESEL FACTS

1. Biodiesel is a rewnewable fuel that is usually refined from soybean oil
2. Biodiesel can help reduce many air pollutants emitted by diesel engines
3. Biodiesel production and use, in comparison to petroleum diesel, produces 78% less carbon dioxide emissions

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ENERGY SECURITY

Biodiesel is a domestic source of energy. Increased use of clean, domestically produced fuels helps reduce reliance on petroleum from overseas, which is good for national security as well as energy security.

FEDERAL AND STATE REQUIREMENTS AND BIODIESEL

The Energy Policy Act of 1992 (EPAct) requires that federal fleets (and some other large fleets) acquire a certain percentage of alternative fuel vehicles (AFVs) in order to help reduce reliance on petroleum-based products. Specifically, EPAct requires that in 2000 and beyond, 75 percent of light-duty vehicle acquisitions in federal fleets be AFVs (note: there are exemptions for law enforcement, emergency, and military vehicles). Executive Order 13149 requires any federal agency with a fleet of 20 or more vehicles in the United States to reduce annual petroleum consumption by 20 percent by 2005 compared to 1999 consumption. Biodiesel is helping many federal fleets meet these requirements. In addition, the use of biodiesel might help power generators located in Massachusetts and Connecticut earn renewable energy credits.

PURCHASING BIODIESEL

The infrastructure to bring biodiesel to consumers is emerging at a rapid pace. Currently, there are several suppliers of biodiesel, approximately twenty blenders and distributors of biodiesel, and a similar number of biodiesel retail fueling sites in New England. Suppliers work with a network of distributors to provide biodiesel to a variety of locations across the country and throughout New England. Biodiesel is available for retail sale at a growing number of refueling stations in New England. The National Biodiesel Board tracks suppliers, distributors, and retail providers of biodiesel. For the most current list visit: **www.biodiesel.org**

USING BIODIESEL IN NEW ENGLAND

A number of organizations in New England are using biodiesel. While not a comprehensive list, the following is a sampling of where biodiesel is being used in New England.

CONNECTICUT - The state DOT has been using B20 for three years. Using biodiesel could help generators earn renewable energy credits under the state's requirements for green power.

MAINE - Biodiesel is used in home heating applications, organic and traditional farming applications, and by individual motorists. Both LL Bean and Maine DOT are using biodiesel. In addition, the City of Bangor is using biodiesel in a number of city vehicles.

MASSACHUSETTS - Biodiesel is used in home heating applications and by individual motorists throughout the state. Otis Air Force Base, Harvard University, the University of Massachusetts at Amherst, NSTAR, the Cities of Medford and Cambridge, and the Town of Brookline are using biodiesel. Harvard University has expressed an interest in running its new Blackstone Street Power Generator on a blend of biodiesel. Like Connecticut, using biodiesel could help generators earn renewable energy credits under the Massachusetts requirements for green power.

NEW HAMPSHIRE - The Mount Cranmore ski resort, the New Hampshire DOT, Keene State, and Pease Air Force Base are using B20. Rymes Propane and Oils, Inc. sells B20 at five filling stations in the state (located in Antrim, Peterborough, Keene, Greenfield, and Loudon). New Hampshire recently eliminated the state fuel tax on biodiesel/diesel blends containing at least 20 percent biodiesel.

RHODE ISLAND - Biodiesel has been used in water taxis, tour boats, and school boilers. Warwick is using a blend of biodiesel in school buses.

VERMONT - The University of Vermont runs its buses on B20. Biodiesel is used in diesel vehicles as well as in home and institutional heating applications in parts of the state.

For More Information

US Environmental Protection Agency
New England Office
www.epa.gov/ne/eco/diesel

US Department of Energy
Office of Energy Efficiency and Renewable Energy (Clean Cities Program)
www.eere.energy.gov/cleancities/

www.eere.energy.gov/afdc/altfuel/biodiesel.html

US National Biodesel Board
www.biodiesel.org

Canadian Renewable Fuels Association
www.greenfuels.org/biodiesel/suppliers.htm

EPA United States Environmental Protection Agency New England

1 Congress Street
Suite 1100
Boston, MA 02114-2023

For more information call the EPA Air Quality Hotline at 1-800-821-1237